Welcome to
NASA Applied Remote Sensing Training (ARSET)
Webinar Series

Introduction to Remote Sensing Data for Water Resources Management

Course Dates: October 17, 24, 31 November 7, 14
Time: 8-9 a.m. and 1-2 p.m. Eastern U.S. Time

ARSET

Applied Remote SEnsing Training
A project of NASA Applied Sciences

Important Information

Presentations URL:

http://water.gsfc.nasa.gov/

Contact for Requesting Recorded Link for the Webinars:

Marines Martins : marines.martins@ssaihq.com

ARSET Water ListServ URL:

https://lists.nasa.gov/mailman/listinfo/nasa-water-training

Applied Remote Sensing Training (ARSET)

Webinar on

Flood Monitoring using NASA Remote Sensing Data

November 19 – December 10, 2013 8-9 AM U.S. Eastern Standard Time (13 PM UTC)

Tuesdays (4 webinars: one hour per week)

Webinar Agenda Available at: http://water.gsfc.nasa.gov/

Registration link: https://attendee.gotostraining.com/r/4746203923002627585

Course Objective:

To introduce NASA remote sensing data and web-based tools for flood monitoring and inundation mapping

Course Participation:

This course is intended for water resources managers, water user associations, NGOs, international development agencies, and private sector organizations. ***Space is limited, preference will be given to these and other environmental professionals.***

For more information Contact:

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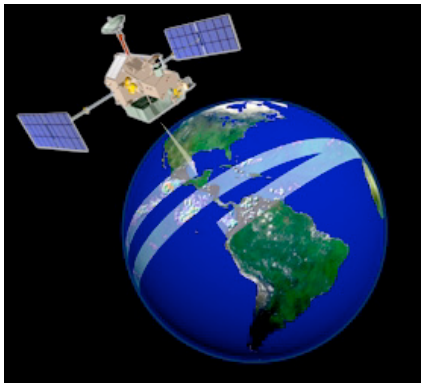
Course Outline

Week 1

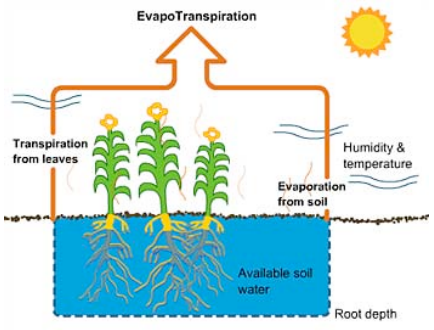


Overview of Remote Sensing and Earth System Modeling

Week 2

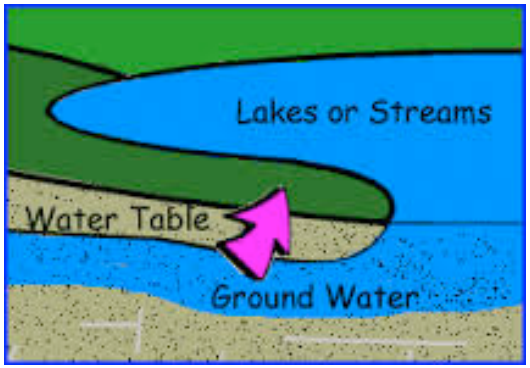
Precipitation and Run Off

Week 3



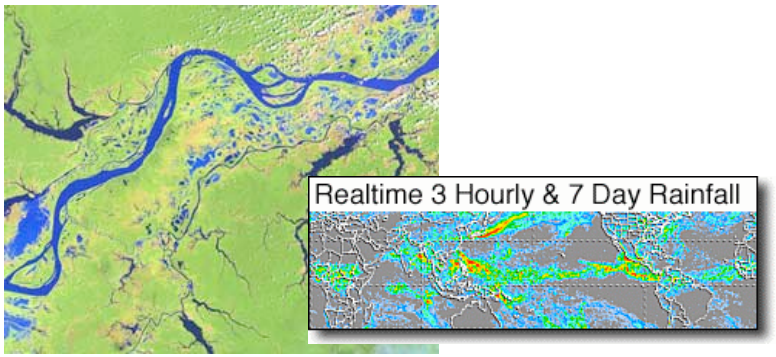
Soil Moisture and Evapotranspiration

Week 4



Reservoir and Ground Water

Week 5



Web-tools for Data Access/ Imaging

Outline

- **Web-tools for Data Access and Analysis**

Presenter: Brock Blevins

Data Selection, Display, Download, Data Import in GIS-ArcMap

Demonstration Case Studies: ***Seasonal and Year-to-Year Assessment of Water Resources Over Northeast Brazil and Mozambique***

- **Summary**

Introduction to Web-tools for Data Access, Analysis and Visualization

Course Summary

We used many acronyms!

Acronym Directory:

http://gcmd.gsfc.nasa.gov/learn/faqs/acronyms.html

Water Resources Management.

Take-home Message from this course:

NASA Remote Sensing Observations and Earth System Models calculations are available for all the Freshwater components.

There are multiple observed and model data quantities with varying spatial/ temporal resolutions and coverage appropriate for various applications.

This Webinar Focused on:

Freshwater Data: There are Strengths and Limitations/Trade-offs

- Soil Moisture data available from Aqua/AMSR-E June 2002 to September 2011 – current soil moisture data available from GLDAS calculations. SMAP Mission planned for launch in 2014 for more accurate, high resolution soil moisture measurements
- Evapotranspiration – multiple regional data products from Landsat available at 30 m resolution (METRIC and SEBAL). Global products from MODIS are available at 1 km resolution (MOD16) and GLDAS
- Ground water storage from GRACE observations provides total water storage data – at relatively low resolution (150,000 km^2). Used for assimilation into high-resolution land surface models
- Global Lake Height data are available every 10 days (~380 lakes, ~90 reservoirs) and every 35 days (~1065 lakes ~230 reservoirs), reservoir size limit ~100 km^2
- Publicly available data (from the web) has a latency that varies from near-real time to 1-3 months, depending on the data set.

This Webinar focused on:

Data Applications and usage

Hydrology Models for Streamflow Monitoring and Prediction
TRMM rainfall, MODIS-derived snow cover and snow melt

Decision Support Systems for Flood and Drought Monitoring, Irrigation Mapping
TRMM Rainfall, NLDAS Soil Moisture, Landsat and MODIS-based Evapotranspiration, Altimeter-derived Lake Heights, GRACE Water Storage

Hydropower Decision Support
Altimeter-derived Reservoir Height Threshold

Crop Monitoring
TRMM rainfall, Landsat imagery, MODIS-derived vegetation Indices, Altimeter-derived Lake Heights

Water Budget Analysis (All Water Cycle Components)
Freshwater Excess or Deficit (anomalies) from GLDAS and GRACE Water Storage

This Webinar focused on:

- Introducing Freshwater availability data from satellites (TRMM, Terra, Aqua, Landsat, TOPEX/Poseidon, GRACE) and satellite-data-assimilated GLDAS/NLDAS models

  > *Satellite orbits, sensors, spatial/temporal resolutions and coverage, levels of data (pixels/swath to uniformly gridded)*

  > *GLDAS/NLDAS components*

- Examples of data application and usage

- **Data access, analysis, visualization tools and demonstration to import data in GIS (today)**

Advanced Webinars/Hands-on Trainings

Focused instruction on the use of NASA data for specific applications. The objective is to enable end-users to incorporate NASA data into their own decision support environment/tools.

- High resolution Level-2 data access and tools, import in GIS
- ‘Hands-on’ case studies for data access/download
- Data accuracy and validation
- Additional data, such as weather and climate, terrain, land use, and socioeconomic data

To Conclude:

- NASA remote sensing and model-based data are **free and easily accessible** through a multitude of web-tools for data access, analysis, and download.

- The ARSET Team works with end-users/ organizations to design and provide advanced webinars and ‘hands-on’ trainings that facilitate the use of NASA data for decision support.

Thank You !

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